

# SEQUENCE LISTING

## (1) GENERAL INFORMATION:

(i) APPLICANT: Dong, Fang  
Lyamichev, Victor I.  
Prudent, James R.  
Dahlberg, James E.  
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(ii) TITLE OF INVENTION: Polymorphism Analysis By Nucleic Acid  
Structure Probing

(iii) NUMBER OF SEQUENCES: 38

(iv) CORRESPONDENCE ADDRESS:

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(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US  
(B) FILING DATE:  
(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:

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(B) REGISTRATION NUMBER: 40,027  
(C) REFERENCE/DOCKET NUMBER: FORS-02777

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## (2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 391 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

AGCTCGTATG	GCACCGGAAC	CGGTAAGGAC	GCGATCACCA	GCGGCATCGA	GGTCGTATGG	60
ACGAACACCC	CGACGAAATG	GGACAACAGT	TTCCTCGAGA	TCCTGTACGG	CTACGAGTGG	120
GAGCTGACGA	AGAGCCCTGC	TGGCGCTTGG	CAATACACCG	CCAAGGACGG	CGCCGGTGCC	180

00200T"897960

GGCACCATCC CGGACCCGTT CGGCGGGCCA GGGCGCTCCC CGACGATGCT GGCCACTGAC 240  
CTCTCGCTGC GGGTGGATCC GATCTATGAG CGGATCACGC GTCGCTGGCT GGAACACCCC 300  
GAGGAATTGG CCGACGAGTT CGCCAAGGCC TGGTACAAGC TGATCCACCG AGACATGGGT 360  
CCCGTTGCGA GATACCTTGG GCCGGTGGTC C 391

5 (2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 391 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

AGCTCGTATG GCACCGGAAC CGGTAAGGAC GCGATCACCA CCGGCATCGA GGTCGTATGG 60  
ACGAACACCC CGACGAAATG GGACAACAGT TTCCTCGAGA TCCTGTACGG CTACGAGTGG 120  
GAGCTGACGA AGAGCCCTGC TGGCGCTTGG CAATACACCG CCAAGGACGG CGCCGGTGCC 180  
GGCACCATCC CGGACCCGTT CGGCGGGCCA GGGCGCTCCC CGACGATGCT GGCCACTGAC 240  
CTCTCGCTGC GGGTGGATCC GATCTATGAG CGGATCACGC GTCGCTGGCT GGAACACCCC 300  
GAGGAATTGG CCGACGAGTT CGCCAAGGCC TGGTACAAGC TGATCCACCG AGACATGGGT 360  
CCCGTTGCGA GATACCTTGG GCCGCTGGTC C 391

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 391 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

AGCTCGTATG GCACCGGAAC CGGTAAGGAC GCGATCACCA GCGGCATCGA GGTCGTATGG 60  
ACGAACACCC CGACGAAATG GGACAACAGT TTCCTCGAGA TCCTGTACGG CTACGAGTGG 120  
GAGCTGACGA AGAGCCCTGC TGGCGCTTGG CAATACACCG CCAAGGACGG CGCCGGTGCC 180  
GGCACCATCC CGGACCCGTT CGGCGGGCCA GGGCGCTCCC CGACGATGCT GGCCACTGAC 240  
CTCTCGCTGC GGGTGGATCC GATCTATGAG CGGATCACGC GTCGCTGGCT GGAACACCCC 300  
GAGGAATTGG CCGACGAGTT CGCCAAGGCC TGGTACAAGC TGATCCACCG AGACATGGGT 360  
CCCGTTGCGA GATACCTTGG GCCGCTGGTC C 391

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 391 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

10 AGCTCGTATG GCACCGGAAC CGGTAAGGAC GCGATCACCA CCGGCATCGA GGTCGTATGG 60  
ACGAACACCC CGACGAAATG GGACAACAGT TTCCTCGAGA TCCTGTACGG CTACGAGTGG 120  
GAGCTGACGA AGAGCCCTGC TGGCGCTTGG CAATACACCG CCAAGGACGG CGCCGGTGCC 180  
GGCACCATCC CGGACCCGTT CGGCGGGCCA GGGCGCTCCC CGACGATGCT GGCCACTGAC 240  
CTCTCGCTGC GGGTGGATCC GATCTATGAG CGGATCACGC GTCGCTGGCT GGAACACCCC 300  
15 GAGGAATTGG CCGACGAGTT CGCCAAGGCC TGGTACAAGC TGATCCACCG AGACATGGGT 360  
CCCGTTGCGA GATACCTTGG GCCGGTGGTC C 391

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

AGCTCGTATG GCACCGGAAC 20

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

TTGACCTCCC ACCCGACTTG 20

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 21 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
    (A) DESCRIPTION: /desc = "DNA"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

10 AGCTCGTATG GCACCGGAAC C

21

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
    (A) DESCRIPTION: /desc = "DNA"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

20 GGACCAGCGG CCCAAGGTAT

20

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 22 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
    (A) DESCRIPTION: /desc = "DNA"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

30 GGACCACCGG CCCAAGGTAT CT

22

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 21 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
    (A) DESCRIPTION: /desc = "DNA"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

40 TTTTGTCCGC TGGTGATCGC G

21

002007"89494950

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

GGAGAGCCAT AG

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

TGGTCTGCGG A

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

GGACGACCGG G

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GGAGATTTGG G

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

CCGCGAGACT G

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

CTAGCCGAGT AG

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

TGTTGGGTCG C

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

CCGCGAGACC G

(2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

10 CCGCAAGACC G 11

(2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 289 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

20 GATTCTGTCT TCACGCAGAA AGCGTCTAGC CATGGCGTTA GTATGAGTGT CGTGCAGCCT 60  
CCAGGACCCC CCCTCCCGGG AGAGCCATAG TGGTCTGCGG AACCGGTGAG TACACCGGAA 120  
TTGCCAGGAC GACCGGGTCC TTTCTTGGAT CAACCCGCTC AATGCCTGGA GATTTGGGCG 180  
TGCCCCCGCA AGACTGCTAG CCGAGTAGTG TTGGGTCGCG AAAGGCCTTG TGGTACTGCC 240  
TGATAGGGTG CTTGCGAGTG CCCCGGGAGG TCTCGTAGAC CGTGCAATC 289

(2) INFORMATION FOR SEQ ID NO:21:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 286 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

35 GATTCTGTCT TCACGCAGAA AGCGTCTAGC CATGGCGTTA GTATGAGTGT CGTGCAGCCT 60  
CCAGGTCCCC CCCTCCCGGG AGAGCCATAG TGGTCTGCGG AACCGGTGAG TACACCGGAA 120  
TTGCCAGGAC GACCGGGTCC TTTCTTGGAT CAACCCGCTC AATGCCTGGA GATTTGGGCG 180  
TGCCCCCGCG AGACTGCTAG CCGAGTAGTG TTGGGTCGCG AAAGGCCTTG TGGTACTGCC 240  
TGATAGGGTG CTTGCGAGTG CCCCGGGAGG TCTCGTAGAC CGTGCA 286

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 289 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

10 GATTCTGTCT TCACGCAGAA AGCGTCTAGC CATGGCGTTA GTATGAGTGT CGTACAGCCT 60  
CCAGGCCCCC CCCTCCCGGG AGAGCCATAG TGGTCTGCGG AACCGGTGAG TACACCGGAA 120  
TTGCCGGGAA GACTGGGTCC TTTCTTGAT AAACCCACTC TATGCCCCGC CATTTGGGCG 180  
TGCCCCGCA AGACTGCTAG CCGAGTAGCG TTGGGTTGCG AAAGGCCTTG TGGTACTGCC 240  
TGATAGGGTG CTTGCGAGTA CCCCAGGAGG TCTCGTAGAC CGTGCAATC 289

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 289 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

25 GATTCTGTCT TCACGCAGAA AGCGCCTAGC CATGGCGTTA GTACGAGTGT CGTGCAGCCT 60  
CCAGGACCCC CCCTCCCGGG AGAACCATAG TGGTCTGCGG AACCGGTGAG TACACCGGAA 120  
TCGCTGGGGT GACCGGGTCC TTTCTTGAG CAACCCGCTC AATACCCAGA AATTTGGGCG 180  
TGCCCCGCG AGATCACTAG CCGAGTAGTG TTGGGTCGCG AAAGGCCTTG TGGTACTGCC 240  
TGATAGGGTG CTTGCGAGTG CCCCAGGAGG TCTCGTAGAC CGTGCAATC 289

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

CTCGCAAGCA CCCTATCA

18



00200T"39792960

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

10 GCAGAAAGCG TCTAGCCATG G 21

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 244 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

20 GCAGAAAGCG TCTAGCCATG GCGTTAGTAT GAGTGTCTGT CAGCCTCCAG GACCCCCCCT 60  
CCCGGGAGAG CCATAGTGGT CTGCGGAACC GGTGAGTACA CCGGAATTGC CAGGACGACC 120  
GGGTCCTTTC TTGGATCAAC CCGCTCAATG CCTGGAGATT TGGGCGTGCC CCCGCAAGAC 180  
TGCTAGCCGA GTAGTGTGG GTCGCGAAAG GCCTTGTGGT ACTGCCTGAT AGGGTGCTTG 240  
CGAG 244

25 (2) INFORMATION FOR SEQ ID NO:27:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 244 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

35 GCAGAAAGCG TCTAGCCATG GCGTTAGTAT GAGTGTCTGT CAGCCTCCAG GTCCCCCCT 60  
CCCGGGAGAG CCATAGTGGT CTGCGGAACC GGTGAGTACA CCGGAATTGC CAGGACGACC 120  
GGGTCCTTTC TTGGATCAAC CCGCTCAATG CCTGGAGATT TGGGCGTGCC CCCGCGAGAC 180  
TGCTAGCCGA GTAGTGTGG GTCGCGAAAG GCCTTGTGGT ACTGCCTGAT AGGGTGCTTG 240  
CGAG 244

(2) INFORMATION FOR SEQ ID NO:28:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 244 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

GCAGAAAGCG TCTAGCCATG GCGTTAGTAT GAGTGTCGTA CAGCCTCCAG GCCCCCCCCT 60  
CCCCGGGAGAG CCATAGTGGT CTGCGGAACC GGTGAGTACA CCGGAATTGC CGGGAAGACT 120  
GGGTCCTTTC TTGGATAAAC CCACTCTATG CCCGGCCATT TGGGCGTGCC CCCGCAAGAC 180  
TGCTAGCCGA GTAGCGTTGG GTTGCAGAAAG GCCTTGTGGT ACTGCCTGAT AGGGTGCTTG 240  
CGAG 244

(2) INFORMATION FOR SEQ ID NO:29:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 244 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

GCAGAAAGCG CCTAGCCATG GCGTTAGTAC GAGTGTCGTG CAGCCTCCAG GACCCCCCCT 60  
CCCCGGGAGAA CCATAGTGGT CTGCGGAACC GGTGAGTACA CCGGAATCGC TGGGGTGACC 120  
GGGTCCTTTC TTGGAGCAAC CCGCTCAATA CCCAGAAATT TGGGCGTGCC CCCGCGAGAT 180  
CACTAGCCGA GTAGTGTGG GTGCGGAAAG GCCTTGTGGT ACTGCCTGAT AGGGTGCTTG 240  
CGAG 244

(2) INFORMATION FOR SEQ ID NO:30:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 216 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

CAGAAAGGGT TTAGCCATGG GGTTAGTATG AGTGTCGTAC AGCCTCCAGG CCCCCCCTC 60  
CCGGGAGAGC CATAGTGGTC TGC GGAACCG GTGAGTACAC CGGAATTGCC GGAAGACTG 120  
GGTCCTTTCT TGGATAAACC CACTCTATGC CCGGCCATTT GGGCGTGCCC CCGCAAGACT 180  
5 GCTAGCCGAG TAGCGTTGGG TTGCGAAAGG CCTTGT 216

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 244 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

15 CAGAAAGGGT TTAGCCATGG CGTTAGTATG AGTGTCGTGC AGCCTCCAGG ACCCCCCCTC 60  
CCGGGAGAGC CATAGTGGTC TGC GGAACCG GTGAGTACAC CGGAATTGCC AGGACGACCG 120  
GGTCCTTTCT TGGATAAAAC CCGCTCAATG CCTGGAGATT TGGGCGTGCC CCCGCAAGAC 180  
TGCTAGCCGA GTAGTGTGG GTCGCGAAAG GCCTTGTTGGT ACTGCCTGAT AGGGTGCTTG 240  
CAAG 244

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 239 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

GCAGAAAGGT TTAGCCATGG GTTAGTATGA GTGTCGTGCA GCCTCCAGGA CCCCCCTCC 60  
30 CGGGAGAGCC ATAGTGGTCT GCGGAACCGG TGAGTACACC GGAATTGCCA GGACGACCGG 120  
GTCCTTTCTT GGATTAACCC GCTCAATGCC TGGAGATTTG GGCCTGCCCC CGCAAGACTG 180  
CTAGCCGAGT AGTGTGGGT CGCGAAAGGC CTTGTGGTAC TGCCTGATAG GGTGCTTGC 239

(2) INFORMATION FOR SEQ ID NO:33:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 240 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

GCAGAAAGGT TTAGCCATGG GGTAGTATG AGTGTCTGAC AGCCTCCAGG ACCCCCCCTC 60  
CCGGGAGAGC CATAGTGGTC TCGGAACCG GTGAGTACAC CGGAATTGCC AGGACGACCG 120  
GGTCCTTTCT TGGATAAACC CGCTCAATGC CTGGAGATTT GGGCGTGCCC CCGCAAGACT 180  
GCTAGCCGAG TAGTGTTGGG TCGCGAAAGG CTTGTGGTA CTGCCTGATA GGGTGCTTGC 240

(2) INFORMATION FOR SEQ ID NO:34:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 240 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

GCAGAAAGGG TTTAGCCATG GCGTTAGTAT GAGTGTCTGTA CAGCCTCCAG GCCCCCCCCT 60  
CCCGGAGAG CCATAGTGGT CTGCGGAACC GGTGAGTACA CCGGAATTAC CGGAAAGACT 120  
GGTCCTTTC TTGGATAAAC CCACTCTATG TCCGGTCATT TGGGCGTGCC CCCGCAAGAC 180  
TGCTAGCCGA GTAGCGTTGG GTTGCAAAGG CTTGTGGTA CTGCCTGATA GGGTGCTTGC 240

(2) INFORMATION FOR SEQ ID NO:35:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 240 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

CAGAAAGGGT TTAGCCATGG GGTAGTACG AGTGTCTGTC AGCCTCCAGG CCCCCCCTC 60  
CCGGGAGAGC CATAGTGGTC TCGGAACCG GTGAGTACAC CGGAATCGCT GGGGTGACCG 120  
GGTCCTTTCT TGGAGCAACC CGCTCAATAC CCAGAAATTT GGGCGTGCCC CCGCGAGATC 180  
ACTAGCCGAG TAGTGTTGGG TCGCGAAAGG CTTGTGGTA CTGCCTGATA GGGTGCTTGC 240

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 239 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

10 AGAAAGCGTT TAGCCATGGC GTTAGTATGA GTGTTGTGCA GCCTCCAGGA CCCCCCTCC 60  
CGGGAGAGCC ATAGTGGTCT GCGGAACCGG TGAGTACACC GGAATTGCCA GGACGACCGG 120  
GTCCTTTCTT GGATCAACCC GCTCAATGCC TGGAGATTTG GGCGTGCCCC CGCAAGACTG 180  
CTAGCCGAGT AGTGTGGGT CGCGAAAGGC CTTGTGGTAC TGCCTGATAG GGTGCTTGC 239

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 232 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

15 GTTTAGCCAT GGCGTTAGTA TGAGTGTCGT GCAGCCTCCA GGACCCCCC TCCCGGGAGA 60  
GCCATAGTGG TCTGCGGAAC CGGTGAGTAC ACCGGAATTG CCAGGACGAC CGGGTCCTTT 120  
25 CTTGGATCAA CCCGCTCAAT GCCTGGAGAT TTGGGCGTGC CCCC GCGAGA CCGCTAGCCG 180  
AGTAGTGTTG GGTCGCGAAA GGCCTTGTGG TACTGCCTGA TAGGGTGCTT GC 232

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 240 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "DNA"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

GCAGAAAGCG TTTAGCCATG GCGTTAGTAC GAGTGTCGTG CAGCCTCCAG GACCCCCCCT 60  
CCCGGGAGAG CCATAGTGGT CTGCGGAACC GGTGAGTACA CCGGAATCGC TGGGGTGACC 120  
GGGTCCTTTC TTGGAACAAC CCGCTCAATA CCCAGAAATT TGGGCGTGCC CCCGCGAGAT 180  
5 CACTAGCCGA GTAGTGTGG GTCGCGAAAG GCCTTGTGGT ACTGCCTGAT AGGGTGCTTG 240